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world to make a thorough and organized anthropological study of this interesting and little-known group.

H. E. G.

LECTURES BY PROFESSOR LORENTZ AT THE CALIFORNIA INSTITUTE OF TECHNOLOGY

THE following is the provisional outline of the extended course of lectures on "Light and matter" to be delivered by Professor H. A. Lorentz, of Haarlem, Holland, during the winter quarter at the California Institute of Technology at Pasadena:

Older theories of light. Maxwell's theory. Maxwell's equations.
 Propagation of light in ponderable bodies.
 Huygen's principle.
 Interference phenomena. Professor Michelson's methods.
 Propagation in a dispersive medium.
 Group velocity.
 Which is the velocity that is determined by the measurements?
 Considerations on (special) relativity.
 Fresnel's coefficient.
 Momentum, energy and mass.
 General considerations on the constitution of electrons, atoms and molecules.
 Models of the atom. Thomson, Rutherford, Bohr.
 Theory of quanta.
 Parson's electron. Lewis's and Langmuir's atom.
 Bohr's theory.
 Principles of correspondence.
 Atoms in stationary states not radiating.
 Emission of light. Long trains of waves. Interference with high differences of phase. Structure of spectral lines. Broadening by Doppler effect and other causes.
 Scattering of light by molecules.
 Dispersion of light.
 Anomalous dispersion. Application to solar atmosphere.
 Gravitation. Propagation and emission of light in a gravitational field.
 Constitution of solid bodies. Atoms held together by electric forces?
 Heat motion in crystals.
 Magnetism. Theories of diamagnetism and paramagnetism.
 Einstein-effect.
 Magnetization by rotation.
 Quantum theory of the Zeeman effect.

Inverse Zeeman-effect. Older theory. Phenomena observed in the direction inclined to the lines of force. Application to the sun's magnetic field.

In addition to the Lorentz lectures, which will be delivered four times a week from January 4 to March 10, Professor Paul Epstein will give a course on "The origin and significance of the quantum theory."

The California Institute of Technology extends a cordial invitation to investigators in physics, and to teachers in universities, colleges and high schools who are able to do so to attend without charge the Lorentz and Epstein lectures, which will be delivered from 4 to 6 P.M. in the main lecture room of the Norman Bridge Laboratory of Physics.

It is probable that before his return to Holland in April Professor Lorentz will spend a week at the University of Chicago and also at several other universities of the West and Middle West.

THE SECRETARSHIP OF SIGMA XI

PROFESSOR HENRY B. WARD, of the University of Illinois, who has been secretary of Sigma Xi since 1904 and has been in large measure responsible for the national development of the Society, writes in the *Sigma Xi Quarterly*:

Two years ago when the quarter-century of service terminated, I made an especially urgent appeal that the work be passed to someone else. Just at that time, however, the society was emerging from the chaotic condition in which all organizations found themselves after the war, and a new project had just been started which bade fair to arouse interest and develop stronger support than any new plan which the society had developed since the earliest years of its history. It was clear to the president and to the members of the fellowship committee, who were intensely interested in this new movement, that a new man could not possibly take up the work of the secretary's office without embarrassing very seriously, and delaying or perhaps fatally injuring the campaign for the establishment of Sigma Xi fellowships. Accordingly, I reluctantly consented to carry the work for one more term, with the positive understanding that my resignation, to take effect in December, 1921, would be final. Under these circumstances, I may be par-

doned for using so prominent a place in the *Quarterly* to give general notice of this fact. It would seem to me unfortunate that the society should come to the election of officers at the Toronto convention without being precisely informed on the matter and having considered carefully candidates for the place. I should not wish in any way to be charged with undue consideration for the work of the office, but I am sure that I should be false to my obligations to the society at large if I did not indicate the proposed change in adequate time for that part of the membership which is interested in the society to give proper thought to the election of my successor. I am sure that the society can secure a better man for the place, but all of us know that chance nominations on the floor of a convention frequently result in the choice of an individual who for various reasons is unable to assume the responsibilities of the position, even though he may be adequately endowed to discharge its duties with credit to himself and entire satisfaction to the organization.

SCIENTIFIC NOTES AND NEWS

THE Royal Society has made the following awards: Royal medals to Sir Frank Dyson, astronomer royal, for his researches on the distribution of the stars, and to Dr. F. F. Blackman, for his researches on the gaseous exchange in plants; the Copley medal to Sir Joseph Larmor, for his researches in mathematical physics; the Davy medal to Professor Philippe A. Guye, for his researches in physical chemistry; and the Hughes medal to Professor Niels Bohr, for his researches in theoretical physics.

ACCORDING to press reports, the Nobel prize for chemistry for 1920 has been awarded to Professor Walter Nernst, of Berlin. The prizes for chemistry and physics for 1921 have been reserved for next year. It is said that the prize in medicine will not be awarded this year, and that the candidates that have been considered most eligible are the English physiologist, Sherrington, the Netherlands professor, Magnus, and the two brain specialists, Henschen of Sweden and Vogt of Germany.

THE Jenner Memorial Medal of the Royal Society of Medicine has been awarded to Sir

Shirley Forster Murphy in recognition of distinguished work in epidemiologic research.

B. B. GOTTSBERGER has been elected secretary of the Mining and Metallurgical Society of America.

LATHROP E. ROBERTS, of Northampton, Mass., has been appointed to the staff of the Bureau of Mines at Berkeley, California, to take charge of work in physical chemistry.

DR. E. D. BALL has been appointed by Secretary Wallace as the representative of the Department of Agriculture on the research information service of the National Research Council to take the place of Dr. Carl L. Alsberg. The secretary has also named Dr. Frederick B. Power, for many years director of the Wellcome Research Laboratory of London and now in charge of the phytochemical laboratory of the bureau of chemistry, as a representative of the bureau in the division of federal relations in the place of Dr. Alsberg.

PROFESSOR WARREN D. SMITH is remaining in the Philippine Islands another year as chief of the Division of Mines, Bureau of Science, his leave of absence from the University of Oregon having been extended.

WALTER F. CAMERON, formerly deputy chief government geologist, Geological Survey of Queensland, and chairman of the committee on development of oil and gas at Roma, has been appointed mining geologist to the Federated Malay States Government and has commenced his new duties at Ipoh, Kinta District, Perak.

DR. CLEMENS PIRQUET, professor of pediatrics in the University of Vienna, will deliver the third Harvey Society Lecture at the New York Academy of Medicine, on December 17. His subject will be "Nutrition treatment of tuberculosis in childhood."

DR. H. H. LOVE, of Cornell University, has returned to Ithaca, having spent a week each at the Kansas Agricultural College and the Iowa Agricultural College, where a series of lectures were given on the probable error and its relation to experimental results.